

REMARKS

Claims 1-20 were pending in the present patent application. Claims 1-20 stand rejected. By this Amendment, claim 7 has been canceled, and claims 9 and 15-18 have been amended. This application now includes claims 1-6, and 8-20.

The Examiner rejected claims 1-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,335,950 (Mirshafiee, et al.) in view of U.S. Patent No. 4,108,482 (Dietrich, et al.). Applicants respectfully request reconsideration of the rejection of claims 1-6 and 8-20 in view of the following.

Claim 1 is directed to a lockset, and recites, “a lock mechanism having an aperture; an operator; and a turn-button mounted in said operator, said turn-button including: a head portion; and a shaft extending from said head portion, said shaft having a leading helical end portion that engages said aperture of said lock mechanism.” Emphasis added.

The Examiner relies on Mirshafiee, et al. for disclosing a turn button 140, and concedes that the shaft of turn button 140 does not include a leading helical end. However, the Examiner asserts that element 75 of Dietrich, et al. discloses a leading helical end, and concludes it would be obvious to one of ordinary skill in the art at the time of the invention to utilize a conical leading end, as taught by Dietrich, et al., on the shaft of Mirshafiee in order to ease in the insertion of the shaft into the aperture.

It is immediately apparent, as recognized by the Examiner, that Dietrich, et al. discloses a spindle 37 having a conical end (Dietrich, et al. Fig. 1). Dietrich, et al. describes the spindle 37 having a conical end 75 serving as a cam follower (Dietrich, et al., column 4, lines 4-7). Applicants respectfully submit that a conical end (a cone) is not analogous to a helical end. Merriam-Webster’s Online Dictionary defines a cone as “a solid generated by

rotating a right triangle about one of its legs.” Thus, a conical end has a single continuous outer surface, as is clearly illustrated in Dietrich, et al. Fig. 1. In contrast, a helical end is an end in the form of a helix, i.e., an end that spirals. Thus, contrary to the Examiner’s assertion, the conical shape as disclosed in Dietrich, et al. is not a helical form.

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 1.

Accordingly, claim 1 is believed allowable in its present form.

Claims 2 and 3 are believed allowable due to their dependence from allowable base claim 1. In addition, claims 2 and 3 further patentably define the invention over the cited references, taken alone or in combination.

Claim 2 recites, “The lockset of claim 1, said leading helical end portion having a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.” The Examiner further asserts that conical end 75 of Dietrich, et al. discloses a plurality of leading helical surfaces that taper and twist. However, the conical end 75 of Dietrich, et al. has only a single continuous outer surface that smoothly tapers to a point without any twisting. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 2.

Accordingly, claim 2 is believed allowable in its own right.

Claim 3 recites, “The lockset of claim 2, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.” The Examiner further asserts

that conical end 75 of Dietrich, et al. (Fig. 5) discloses a plurality of leading helical surfaces that smoothly transition between adjacent helical surfaces.

However, as shown in Dietrich, et al. Fig. 5 the square shaft abruptly changes to a conical end having a single continuous outer surface that smoothly tapers to a point. Thus, the four surfaces of the rectangular portion of the shaft are not formed as helical surfaces, nor does the conical end 75 define a plurality of helical surfaces.

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants' claim 3.

Accordingly, claim 3 is believed allowable in its own right.

Claim 4 recites, "A turn-button for a lockset, comprising: a head portion; and a shaft extending from said head portion, said shaft having a leading helical end tip." Claim 4 differs in scope from claim 1, for example, through the recitation of "leading helical end tip".

In rejecting claim 4, the Examiner again relies on Mirshafiee, et al. for disclosing a turn button 140, and concedes that the shaft of turn button 140 does not include a leading helical end portion. However, the Examiner asserts that element 75 of Dietrich, et al. discloses a leading helical end, and concludes it would be obvious to one of ordinary skill in the art at the time of the invention to utilize a conical leading end, as taught by Dietrich, et al., on the shaft of Mirshafiee in order to ease in the insertion of the shaft into the aperture.

Applicants respectfully submit that a conical end (a cone) is not analogous to a helical end tip, as recited in claim 4. A conical end tip 75 as disclosed Dietrich, et al. has a single continuous outer surface, rather than having a leading helical end tip, i.e., an end tip in the

form of a helix, i.e., an end tip that spirals. Thus, contrary to the Examiner's assertion, the conical shape of the tip of conical end 75 as disclosed in Dietrich, et al. is not a helical form.

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants' claim 4.

Accordingly, claim 4 is believed allowable in its present form.

Claims 5 and 6 are believed allowable due to their dependence from allowable base claim 4. In addition, claims 5 and 6 further patentably define the invention over the cited references, taken alone or in combination.

Claim 5 recites, "The turn-button of claim 4, said leading helical end tip having a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft." The Examiner further asserts that conical end 75 of Dietrich, et al. discloses a plurality of leading helical surfaces that taper and twist. However, the conical end 75 of Dietrich, et al. has only a single continuous outer surface that smoothly tapers to a point without any twisting. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants' claim 5.

Accordingly, claim 5 is believed allowable in its own right.

Claim 6 recites, "The turn-button of claim 5, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces." The Examiner further asserts that conical end 75 of Dietrich, et al. (Fig. 5) discloses a plurality of leading helical surfaces that smoothly transition between adjacent helical surfaces.

However, as shown in Dietrich, et al. Fig. 5 the square shaft abruptly changes to a conical end having a single continuous outer surface that smoothly tapers to a point. Thus, the four surfaces of the rectangular portion of the shaft are not formed as helical surfaces, nor does the conical end 75 define a plurality of helical surfaces.

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants' claim 6.

Accordingly, claim 6 is believed allowable in its own right.

Claim 7 has been canceled.

Claim 8 is believed allowable due to its dependence from allowable base claim 1. In addition, claim 8 further patentably defines the invention over the cited references, taken alone or in combination.

Claim 8 recites, "The lockset of claim 1, said lock mechanism including a rotatable actuator having said aperture, wherein once said leading helical end portion engages said aperture, a rotation of said turn-button effects a corresponding rotation of said rotatable actuator of said lock mechanism."

The Examiner relies on Mirshafiee, et al. for disclosing a turn button 140, and concedes that the shaft of turn button 140 does not include a leading helical end. However, the Examiner asserts Dietrich, et al. discloses the specific subject matter of claim 8 at column 3, lines 44-66. The cited passage from Dietrich, et al., however, does not discuss conical end 75, which the Examiner asserts as being analogous to the leading helical end portion recited in claims 1 and 8. Further, Dietrich, et al. discloses in column 4, lines 5-14, that the conical end

75 serves as a cam to permit an axial shifting of the spindle by its engagement with the reduced end portion 71 of the locking slide 60.

Further, the conical end 75 disclosed in Dietrich, et al. does not include any surface that, once conical end 75 engages said aperture, a rotation of the turn-button would effect a corresponding rotation of said rotatable actuator of said lock mechanism. Rather, due to single continuous outer surface of conical end 75, no rotation could be effected until the rectangular portion of the shank of the spindle would engage the aperture.

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants' claim 8.

Accordingly, claim 8 is believed allowable in its own right.

Claim 9 recites, in part, "said means including a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft." Claim 9 is believed allowable for substantially the same reasons as set forth above with respect to claims 1 and 2.

Claim 10 recites, "The lockset of claim 9, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces. Claim 10 is believed allowable for substantially the same reasons as set forth above with respect to claims 1, 2 and 3.

Claims 11-13 are believed allowable due to their dependence from allowable base claim 1.

Claim 14 is believed allowable due to its dependence from allowable base claim 1 and/or intervening claim 2. In addition, claim 14 further patentably defines the invention over the cited references, taken alone or in combination.

Claim 14 recites, “The lockset of claim 2, wherein a number of said plurality of leading helical surfaces is greater than two.” In other words, the number of the plurality of leading helical surfaces is three or more. In contrast, the conical end 75 of Dietrich, et al. clearly has only a single continuous outer surface. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 14.

Accordingly, claim 14 is believed allowable in its own right.

Claim 15 is believed allowable due to its dependence from allowable base claim 4.

Claim 16 is believed allowable due to its dependence from allowable base claim 4 and/or intervening claim 5. In addition, claim 16 further patentably defines the invention over the cited references, taken alone or in combination.

Claim 16 recites, “The turn-piece of claim 5, wherein a number of said plurality of leading helical surfaces is greater than two.” In other words, the number of the plurality of leading helical surfaces is three or more. In contrast, the conical end 75 of Dietrich, et al. clearly has only a single continuous outer surface. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 16.

Accordingly, claim 16 is believed allowable in its own right.

Claims 17 and 18 are believed allowable due to their dependence from allowable base claim 9.

Claim 19 is believed allowable due to its dependence from allowable base claim 9. In addition, claim 19 further patentably defines the invention over the cited references, taken alone or in combination.

Claim 19 recites, “The lockset of claim 9, wherein a number of said plurality of leading helical surfaces is greater than two.” In other words, the number of the plurality of leading helical surfaces is three or more. In contrast, the conical end 75 of Dietrich, et al. clearly has only a single continuous outer surface. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 19.

Accordingly, claim 19 is believed allowable in its own right.

Claim 20 is believed allowable due to its dependence from allowable base claim 1. In addition, claim 20 further patentably defines the invention over the cited references, taken alone or in combination.

Claim 20 recites, “The lockset of claim 1, wherein said leading helical end portion forms a plurality of side surfaces of said shaft.” (Emphasis added). In contrast, the conical end 75 of Dietrich, et al. clearly has only a single continuous outer side surface. (See Dietrich, et al. Figs. 1 and 5).

Thus, even if the turn button of Mirshafiee, et al. were modified to include the conical end as disclosed in Dietrich, et al., the result would not yield the structure of the turn-button, as recited in Applicants’ claim 20.

Accordingly, claim 20 is believed allowable in its own right.

In view of the above, Applicants respectfully request that the rejection of now pending claims 1-6 and 8-20 under 35 U.S.C. §103(a) be withdrawn.

Applicants believe that the present application is in condition for allowance in its present form, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

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